

REMARKS

The Applicants have carefully reviewed the contents of the Office Action dated May 28, 2003. Request for reconsideration is respectfully submitted in view of the comments set forth below.

Claims 1 (presumably claim 15), 6, and 7 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,534,818 granted to Kreager, et al. (hereinafter referred to as "Kreager"), as explained in the third paragraph of the Office Action. This rejection is respectfully traversed.

As discussed in the Background Of The Invention, known ultrasonic sealing apparatuses employ a band-shaped ridge provided nearly at the center of a face of the horn, and a concave groove perpendicular to the ridge is provided nearly at the center of a face of an anvil, where the band-shaped ridge and concave groove abut against the container portion to be sealed. The Applicants of the instant invention have discovered a problem in that steps are formed in the vicinity of both end portions of the longitudinally sealed portion. Since the tubular laminated packaging material is formed from a single piece of web material and pressed together, the thickness of the connecting webbed material, which forms the tube, is a three-ply portion 12 that is thicker than that of the remaining two-ply portion, as shown in Fig. 2 of the instant drawings. As a result of the formed steps, the sealing pressure becomes uneven, so that a tunnel or through passage occasionally occurs in the step portion, thereby generating sealing failure. This problem has been solved by the Applicants' invention.

The Applicants' inventive ultrasonic sealing apparatus includes a horn having an

elongated, flat sealing face and an opposing jaw having an elongated pressing face that presses the tubular laminated packaging material in cooperation with the sealing face of the horn, where the elongated pressing face extends in a longitudinal direction, and has a center portion and two end portions where the center portion is narrower than both end portions. As explained on page 4, lines 11-18 of the instant specification, the Applicants discovered that if a center portion of a pressing face of an opposing jaw was formed in the longitudinal direction so that it was narrower than both end portions of the pressing face, the necessary pressing force could be applied evenly to the longitudinally sealed container portion, which has a three-ply thickness, without damaging the laminated packaging material, thereby avoiding sealing failures. That is, the varying of the width of the elongated pressing face of the opposing jaw enables the two-ply tubular packaging material, as well as the three-ply tubular packaging material, to be effectively sealed without damaging the tubular packaging material.

As shown in Figs. 4 and 5, the center portion 24 is narrower than the two end portions 23. The narrower center portion mainly presses the three-ply longitudinally sealed portion of a tubular packaging material, while the broad end portions press the two-ply longitudinally sealed portion of a tubular packaging material.

Kreager discloses an ultrasonic sealing apparatus in which a laminated packaging material containing thermoplastic substance is formed into a tubular form and the tubular material is transversely ultrasonically sealed by an apparatus comprising a horn with an elongated and flat sealing face and an opposing jaw. However, structural mischaracterization of Kreager appears to have occurred in the Office Action's description of Kreager. The Applicants' claim 15 recites "an opposing jaw having an elongated pressing face that presses the tubular laminated packaging material in cooperation with the sealing face of the horn."

That is, the elongated pressing face of the opposing jaw must work in cooperation with the sealing face of the horn. Then, the claimed elongated pressing face, extending in a longitudinal direction, has a center portion which is narrower than its two end portions. In the Office Action, the Examiner states "The opposing jaw is disclosed as having an elongated pressing face that presses the packaging material in cooperation with the sealing face of the horn and having a center portion and two end portions wherein the center portion is narrower than both end portions as seen in figure as item 28 in Fig. 1." However, as explained in column 4, lines 44-45, and lines 52-65 of Kreager, the item 28 is an upper film pulling means. As shown Fig. 2 of Kreager, it is the horn 12 and the pressing face (38,40) of the opposing jaw that, together, press the tubular packaging material to form the necessary seal. Accordingly, it is respectfully submitted that the upper film pulling means 28 is not an elongated pressing face, but another element of the filling and packaging apparatus. Nowhere does Kreager disclose that the upper film pulling means 28 works "in cooperation with the sealing face of the horn." Thus, Kreager cannot anticipate the claimed invention in that Kreager fails to disclose an opposing jaw having an elongated pressing face extending in a longitudinal direction and having a center portion that is narrower than its two end portions.

In light of the above, it is submitted that claim 15 is patentable over Kreager. Applicants further submit that dependent claims 6-7, which depend from claim 15, are patentable for at least the same reasons a claim 15.

Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kreager, as explained in paragraph 7 of the Office Action. As mentioned above, Kreager fails to disclose an opposing jaw having an elongated pressing face extending in a longitudinal direction and

having a center portion that is narrower than its two end portions as required by claim 15. Accordingly, claim 5, which depends from claim 15, is also believed patentable for at least the same reasons as claim 15.

Claims 2, 3, and 4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kreager in view of U.S. Patent No. 4,159,220 to Bosche, et al. (hereinafter referred to as "Bosche"), as explained in paragraph 5 of the Office Action. This rejection is respectfully traversed.

Bosche is directed to an apparatus and method for vibration sealing. While Bosche discloses an anvil 20 and a horn 18, nowhere does Bosche disclose that the work surface 28 of anvil 18 extends in a longitudinal direction and has a center portion which is narrower than the two end portions. Accordingly, Bosche adds nothing to Kreager regarding the omissions in Kreager with respect to claim 15 as discussed above. Therefore, it is submitted that claims 2-4 are patentable over any reasonable combination of Kreager and Bosche, since claims 2-4 depend from claim 15.

Further, it is noted that while "the work surface 130' of the anvil 120' is stepped or recessed as indicated by reference numeral 131' to accommodate the thickest portion at the overlapped layers 146'", as set forth in column 7, lines 45-48, of Bosche, in Fig. 4, reference numeral 131' has a size of the same grade as the overlapped layers. Nowhere does Bosche specifically illustrate or disclose "a length of a center portion, in longitudinal direction of the action face of the opposing jaw, formed into the action face narrower than both end portions is at least larger than a length of a longitudinally sealed three-ply portion of the tubular laminated packaging material under a pressed state", as required by claim 4. Accordingly, the present

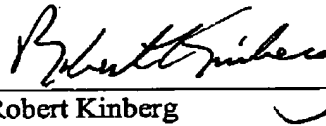
invention and that of Kreager and Bosche have many differences, from the object of the invention to the components. Claim 4 is thus believed to be patentable for this additional reason.

Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over Kreager in view of U.S. Patent No. 3,962,508 to Nakanose, et al. (hereinafter referred to as "Nakanose"), as explained in paragraph 6 of the Office Action. This rejection is respectfully traversed.

Nakanose does not disclose an ultrasonic horn having an elongated, flat sealing face or an opposing jaw wherein the center portion is narrower than both end portions and has an elongated pressing face. Nakanose thus adds nothing to claim 15 with respect to the omission in the disclosure of Kreager as discussed above. Claim 8 is therefore believed to be patentable over any reasonable combination of Kreager and Nakanose for at least the same reasons as claim 15. It is further noted that Nakanose is directed to a thermoplastic resin tape for packaging. While Nakanose indicates, in column 1, lines 5-9, that its thermoplastic resin tape can be used with a packaging machine, the machine merely winds the tape tightly around an article 45, as shown in Fig. 5 of Nakanose. Nowhere does Nakanose disclose, let alone teach or suggest, employing this thermoplastic resin tape for sealing a laminated packaging material to form a container, as required by claim 8. Claim 8 is thus submitted to be patentable for this additional reason.

In view of the remarks, it is respectfully submitted that claims 2-8, and 15 are patentable over the art or record. Accordingly, the Applicants request the issuance of a Notice of Allowability, indicating that claims 2-8, and 15 are allowed over the prior art of record.

Respectfully submitted,



Robert Kinberg
Registration No. 26,924
VENABLE
P.O. Box 34385
Washington, D.C. 20043-9998
Telephone: (202) 962-4000
Telefax : (202) 962-8300

RK/KBL
#502254